

Realizing The Promises For High-Value Cassava: Root Quality Traits

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A decade ago CIAT began the search of what it called “High-Value Cassava”. What was then only a promise has gradually become a reality. In the area of starch quality traits an amylose-free (*waxy*) mutation was identified and has now been successfully introgressed to be released as commercial varieties. Part of this work is financially supported by the private starch sector. A small-granule mutation was also identified and found to be particularly suitable for processes requiring starch hydrolysis (e.g. sweeteners and ethanol). Moreover, CIAT has also identified a high-amylose genotype with as much as 42% amylose (whereas cassava starch typically has around 20%). Breeding methodologies to exploit these traits have been developed and tested. On the nutritional side, during the past decade, the increases in carotenoids content in the roots have been remarkable, and there seems to be no plateau in the progress made. Protocols for efficient selection in carotenoids have also been made. These results demonstrate that *Manihot esculenta* has many useful traits waiting to be found and also that this crop is capable of rapid responses if proper breeding methodologies are employed. Future work will concentrate on developing herbicide resistance and improving the protocol for assessing post-harvest physiological deterioration in roots.